

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number
WO 2005/031444 A3

(51) International Patent Classification⁷: G09F 19/14,
B60K 35/00, H04N 13/00

(21) International Application Number:
PCT/IB2004/051838

(22) International Filing Date:
23 September 2004 (23 09 2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0322681 8 27 September 2003 (27 09 2003) GB

(71) Applicant (for all designated States except US): **KONINKLUKE PHILIPS ELECTRONICS N.V.** [NL/NL],
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL)

(72) Inventors; and

(75) Inventors/Applicants (for US only): **IJZERMAN, Willem, L.** [NL/NL], c/o Philips Intellectual Property & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB) **CORNELISSEN, Hugo, J.** [NL/NL], c/o Philips Intellectual Property & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB) **DEKKER, Tim** [NL/NL], c/o Philips Intellectual Property & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB) **KARMAN, Gerardus,**

P. [NL/NL], c/o Philips Intellectual Property & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB)

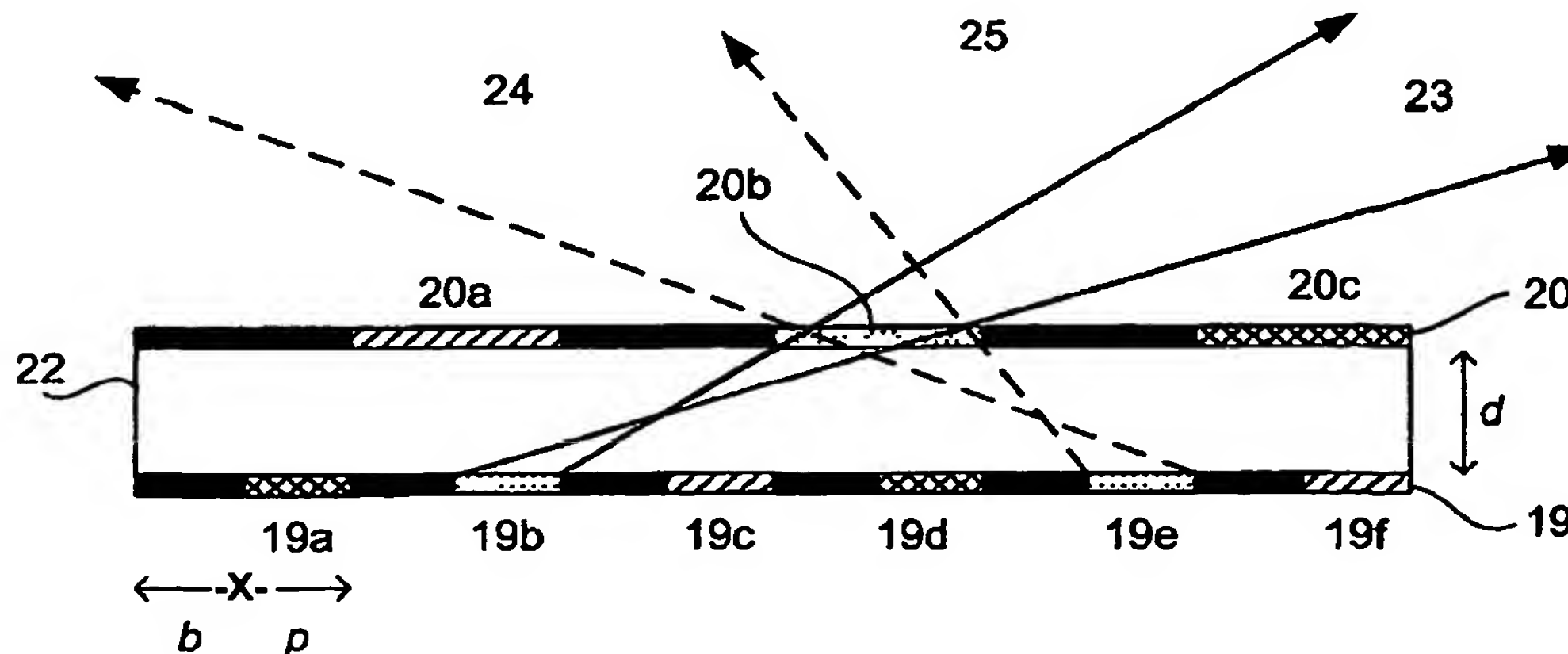
(74) Agent: **WHITE, Andrew, G.**, c/o Philips Intellectual Property & Standards, Cross Oak Lane, Redhill Surrey RH1 5HA (GB)

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

[Continued on next page]

(54) Title: MULTI-VIEW DISPLAY



(57) Abstract: A multi view display (49) is arranged to provide large viewing zones (23, 24) while producing little or no cross-talk. The display may include a barrier (20) comprising a plurality of colour portions (20a, 20b, 20c) that co-operate with colour filters (19a-19f) in a display panel (14) to selectively direct light to the viewing zones (23, 24). A lenticular screen (30) may be arranged to create or image light lines onto imaging units (32a, 32f) of the display panel (14) that are spaced from one another, so that adjacent units (32a, 32f) are illuminated by light from different lenses (30a, 30b, 30c), directed towards different viewing zones (23, 24). A light source (35) may generate the light at positions aligned with boundaries between adjacent lenses (30a, 30b, 30c). The imaging units may be operated so that units (32a, 32b) displaying information for the first viewing zone (23) are separated from units (32d, 32e) displaying information for the second viewing zone (24) by units (32c, 32f) not used to display information. Adjacent columns of units (32a, 32b) may be used to display information to one viewing zone (23). The viewing zones (23, 24) may be enlarged using a scatterer (36). A switchable diffuser (40) or barrier (48) may be provided so that the display (49) can operate in different multi-view and/or single view modes.

WO 2005/031444 A3



Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(H)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,

IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

— with international search report

(88) Date of publication of the international search report:

9 March 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.